

a mirror, in the chamber is therefore determined by direct molecular bombardment of the component's surface. The molecule flux can be calculated using the following equation:

Cond
A1

$$\text{Molecular flux} = n_{CH_x} v / 4$$

Where n_{CH_x} is the contaminant concentration (largely made up of hydrocarbons, but it may also be water, for example) and v is the mean velocity of the contaminant particles.

Page 8, please delete the full paragraph beginning on line 20 and replace it with the following paragraph:

A2

By introducing an inert gas into the chamber at a pressure of 0.1 to 10 Pa, the mean free path of the contaminant particles is decreased and the flux of the particles towards the optical component is now determined by diffusion. The diffusion flux can be calculated as follows:

$$\text{Diffusion flux} = D n_{CH_x} / l$$

where D , the diffusion coefficient, is determined by $D = kTv / 3\sigma p$, l is the characteristic size of the vacuum chamber, σ is the diffusion cross section, p is the background pressure in the chamber and k is the Boltzmann's constant. σ can be calculated using a known diffusion coefficient for Ar-CH_x mixtures at a given T and p . v , the mean velocity of the molecules in the mixture can in this case be calculated using:

$$D = \sqrt{8kT / \pi M}$$

Where M is the mass of a molecule in the mixture.

IN THE CLAIMS:

Please cancel claim 5 without prejudice or disclaimer.